U.S. FISH AND WILDLIFE SERVICE
SPECIES ASSESSMENT AND LISTING PRIORITY ASSIGNMENT FORM

SCIENTIFIC NAME: *Hazardia orcuttii* (A. Gray) E. Greene

COMMON NAME: Orcutt's Hazardia, Orcutt's brittleweed, Orcutt's goldenbush

LEAD REGION: Region 8

INFORMATION CURRENT AS OF: April 6, 2006

STATUS/ACTION

____ Species assessment - determined species did not meet the definition of endangered or threatened under the Act and, therefore, was not elevated to Candidate status

___ New candidate

_X__ Continuing candidate

___ Non-petitioned

___ Petitioned - Date petition received:

__ 90-day positive - FR date:

__ 12-month warranted but precluded - FR date:

__ Did the petition request a reclassification of a listed species?

FOR PETITIONED CANDIDATE SPECIES:

a. Is listing warranted (if yes, see summary of threats below)? _yes

b. To date, has publication of a proposal to list been precluded by other higher priority listing actions? _yes

c. If the answer to a. and b. is "yes", provide an explanation of why the action is precluded. We find that the immediate issuance of a proposed rule and timely promulgation of a final rule for this species has been, for the preceding 12 months, and continues to be, precluded by higher priority listing actions. During the past 12 months, most of our national listing budget has been consumed by work on various listing actions to comply with court orders and court-approved settlement agreements, meeting statutory deadlines for petition findings or listing determinations, emergency listing evaluations and determinations and essential litigation-related, administrative, and program management tasks. We will continue to monitor the status of this species as new information becomes available. This review will determine if a change in status is warranted, including the need to make prompt use of emergency listing procedures. For information on listing actions taken over the past 12 months, see the discussion of "Progress on Revising the Lists," in the current CNOR which can be viewed on our Internet website (http://endangered.fws.gov).

___ Listing priority change

Former LP: ___

New LP: ___

Date when the species first became a Candidate (as currently defined):

___ Candidate removal: Former LP: ___

___ A – Taxon is more abundant or widespread than previously believed or not subject to the degree of threats sufficient to warrant issuance of a proposed listing or

continuance of candidate status.

___U – Taxon not subject to the degree of threats sufficient to warrant issuance of a proposed listing or continuance of candidate status due, in part or totally, to conservation efforts that remove or reduce the threats to the species.

___ F – Range is no longer a U.S. territory.

___ I – Insufficient information exists on biological vulnerability and threats to support listing.

___ M – Taxon mistakenly included in past notice of review.

___ N – Taxon does not meet the Act's definition of "species."

___ X – Taxon believed to be extinct.

ANIMAL/PLANT GROUP AND FAMILY: Flowering plants, Asteraceae (sunflower family)

HISTORICAL STATES/TERRITORIES/COUNTRIES OF OCCURRENCE: California, U.S.A. and Estado de Baja California, Mexico

CURRENT STATES/ COUNTIES/TERRITORIES/COUNTRIES OF OCCURRENCE: California, U.S.A. and Estado de Baja California, Mexico

LAND OWNERSHIP: All private. The only known extant U.S. native occurrence of this species is in the Manchester Conservation Area, previously known as the Manchester Mitigation Bank, managed by CNLM.

LEAD REGION CONTACT: Diane Elam, CNO, Sacramento, CA 916/414-6464

LEAD FIELD OFFICE CONTACT: CFWO, Dr. Gary D. Wallace, 760/431-9440

BIOLOGICAL INFORMATION

Species Description

Hazardia orcuttii is an evergreen shrubby species in the Asteraceae (sunflower family). The resinous shrubs are 50-100 centimeters (20-40 inches (in)) high and the relatively few branches are erect. The sessile leaves are spathulate to lanceolate with entire margins, and up to 5 centiimeters (2 in) long. Leaf surfaces have resinous surface glands and are glabrous. The flower heads have involucre bracts with entire margins and fertile disk flowers. The ray flowers are conspicuous. This species flowers from August to October (Burrascano 2001). This species is easily distinguished from the only other species in the area, *Hazardia squarrosa* which lacks conspicuous ray flowers and has toothed leaf margins.

Taxonomy

Hazardia orcuttii was first described as *Haplopappus orcuttii* by Asa Gray (1885) based on material collected by Charles R. Orcutt in September 1884 at Todos Santos Bay in Baja California, Mexico. Subsequently, Greene (1894), in recognition of the significant differences among several groups of *Haplopappus*, published the currently accepted combination *Hazardia*

orcuttii (A. Gray) E. Greene. However, the treatment of Hall (1928) that included this species in section Hazardia of the genus *Haplopappus* was followed. Clark (1979) published a taxonomic treatment of the genus *Hazardia* in which he recognized the combination originally proposed by Greene. This treatment has been followed in floristic treatments since that time (Beauchamp 1986, Brown and Clark 1993).

Habitat

The only known extant native occurrence of this species in the U.S. is in coastal San Diego County, California at the Manchester Conservation Area, previously known as the Manchester Mitigation Bank, now managed by The Center for Natural Lands Management (CNLM). The area is about 50 hectares (ha) (123 acres (ac)) and includes Diegan coastal sage scrub, southern maritime chaparral, and willow scrub (CNLM, 2000a, 2003b; Burrascano 2001). Within the conservation area, the natural population of *Hazardia orcuttii* occupies only 2 ha (5 ac). The Manchester Conservation Area also supports populations of federally-listed California gnatcatcher (*Polioptila californica californica*), *Arctostaphylos glandulosa* ssp. *crassifolia*, and *Acanthomintha ilicifolia*. The general substrate for the *Hazardia orcuttii* is sandstone.

Historical Range/Distribution

In August 1979, 95 years after the species was first described from specimens from Mexico, Oberbauer (1981) discovered the only occurrence of this species in the United States. He estimated there were several hundred individuals at the site and indicated the species had not been included in the environmental impact report for the area which was subsequently approved for development.

Historically, in Baja California, Mexico, the species has been collected from scattered localities near the coast extending from the border south to Colonet Mesa. Burrascano (2001) listed 17 localities for Hazardia orcuttii in Baja California, Mexico based on herbarium specimens, the most recent was from 1985. Kirker (2005) recently verified the persistence of the species at several sites in Baja California. This area continues to undergo development and associated habitat degradation.

Current Range/Distribution

The only known extant U.S. native occurrence of this species is in the Manchester Conservation Area, previously known as the Manchester Mitigation Bank, managed by CNLM. This area is in northwestern San Diego County, California. A 1988 California Natural Diversity Data Base Report (CNDDB 1992) states that half of the occurrence was destroyed in 1984 and that about 300 plants were seen in 1988. Burrascano (2001) notes the record of loss and estimated that about 700 plants may have been present at the site originally. Recently, three other occurrences have been established in the vicinity. These are described below.

Population Estimates/Status

The native occurrence may have supported a population of about 700 plants prior to 1984 (CNDDB 1992, Burrascano 2001). Half of the occurrence was reportedly destroyed in 1984 (CNDDB 1992). The occurrence supported about 300 plants in 1988 (CNDDB 1992). The population was estimated to be 250 in 1996 and 350 in 2000 (CNLM 2000a). The latter figure was said to include 70 surviving plants from an unauthorized translocation of 200 plants to the site carried out in 1999. The number of these surviving was revised to 53 in 2003 (CNLM 2003b). This report (CNLM 2003b) estimated that 598 individuals were present in 2001, noted that the area was not surveyed in 2002, and that 150 plants were planted on the east mesa in 2003. The cause of the increase in the number of plants from about 350 in 2000 to 598 in 2001 is not known. It may be because of the increased precision of counting. At least 203 of the current estimate of 748 plants were planted at the site. No recruitment at this site has been reported. About 73 percent of the 200 plants translocated to the site in 1999 have died (CNLM 2000a, 2003b) and 2 percent of those planted out in 2003 apparently died (CNLM Markus Spiegelberg *in litt*. 2004). The biotic interaction of the specimens planted out with those native to the site is not known.

Recently Kirker (2005 *in litt*.) visited the majority of the Hazardia orcuttii sites in Mexico mentioned in Burrascano's (2001) petition. Many of the sites had not been verified for some time. Of the 17 sites Kirker did not visit two, one was too vague to locate, five (including two considered to be the same place) had no plants, six sites had "a couple dozen" or fewer plants, one site south of Rio Guadalupe had 50 plants, one site at Jatay had 300 to 400 pure H. orcuttii, and one site at Punta Banda had 750 plants.

Three new occurrences were established, in the vicinity of the Manchester site, as part of the management goals for this species (CNLM 2000a). In addition, 150 plants were planted at the native occurrence at the Manchester site noted above. According to CNLM (2004) these outplantings were approved by CDFG. Two hundred plants, from propagation done in 2002, were planted at the native site in 2004 (CNLM 2005). At Kelly Ranch Habitat Conservation Area 24 plants were planted out in January 2003. Of these, four died within the first two weeks (CNLM Markus Spiegelberg *in litt*. 2004). An additional 100 plants were planted at Kelly Ranch in February 2004. At the Rancho La Costa Habitat Conservation Area 200 plants were planted in February 2004. At San Elijo Lagoon, 156 plants were planted, about 50% died (CNLM 2005). The plants were propagated from on-site seed collections. Recruitment at these sites has not been recorded. The actual or potential interaction of these introduction sites with the only known native site at Manchester is unknown.

The estimated total number of plants is now about 1200 plants. At the native occurrence at Manchester site there are 748 plants, at least 203 of which were planted at the site. The three newly established sites support about 480 plants.

THREATS

A. The present or threatened destruction, modification, or curtailment of its habitat or range.

Clark (1979) described *Hazardia orcuttii* being locally common in open habitats along the coastal plains and hills from Colonet to Tijuana in Baja California Mexico. John Rebman Curator of the Herbarium, San Diego Natural History Museum (Rebman pers. comm. 2000) stated, as have others, that the entire region of coastal plains and chaparral from Tijuana to Ensenada is being developed for housing at a rapid pace. *Hazardia orcuttii* has no conservation standing in Mexico (J. Rebman, pers. comm. 2000).

The majority of the Encinitas occurrence was included in the Manchester Mitigation Bank in the mid 1990s. This 50 ha (123 ac) site is now called the Manchester Conservation Area and is managed by CNLM. However, there have been more or less continuous impacts from people in the adjacent housing area who use the open space as a recreation area. Impacts include pedestrian trampling and creation of bicycle trails near *Hazardia orcuttii* plants. In addition, impacts to the site, as well as potential impacts to the *Hazardia* population, occurred when specimens of this species were apparently transplanted onto the site in 1999 from an adjacent parcel that supported a portion of this occurrence. There was no involvement by the Service or the California Department of Fish and Game (CDFG) in the planning or approval of this transplantation. The long-term impacts to the portion of the occurrence in the Manchester Mitigation Bank are unknown at this time (see discussion of translocation under Factor E). Contrary to the management guidelines, and without the consent of the CNLM, in October 2000, the Encinitas Fire Department cleared habitat on the site for training purposes. It is not known how many plants were impacted. Habitat clearance as a management tool for fires will have to be evaluated in the context of conservation of *Hazardia orcuttii*. Habitat clearing may scrape the soil to a degree that eliminates or degrades vegetative plants as well as their seeds. These direct impacts may compound the indirect effects of increased erosion, introduction of more competitive exotic species, and the disruption of the ecosystem that supports pollinators.

B. Overutilization for commercial, recreational, scientific, or educational purposes.

Not known to be a factor at this time.

C. Disease or predation.

Not known to be a factor at this time.

D. The inadequacy of existing regulatory mechanisms.

Hazardia orcuttii is included as a List 1B plant (rare, threatened, or endangered in California and elsewhere) in the most recent edition of the California Native Plant Society's (CNPS) Inventory (CNPS 2001). California Environmental Quality Act (CEQA) obligates disclosure of environmental resources within proposed project areas and may enhance opportunities for conservation efforts. However, CEQA does not guarantee that such conservation efforts will be implemented. Protection of listed species through CEQA is dependent upon the discretion of the lead agency involved.

The Manchester Mitigation Bank was set aside in 1997 for the preservation of maritime chaparral, coastal sage scrub as well as California coastal gnatcatchers. The site is currently

managed by the CNLM. There continues to be persistent incursions for activities not compatible with habitat preservation for all of the biota noted above.

In 1999, the owner of an adjacent parcel moved about 200 plants of *Hazardia orcuttii* from his property, to lands of the Manchester Conservation Area apparently without the knowledge of CNLM (CNLM 2003b). According to CNLM (2000a) about 70 of these were still alive months later. Only 53 of these were alive in 2003 (CNLM 2003b). Under the MHCP agreement (AMEC 2003), 97 percent of the known location points, major populations, and critical locations for this species were to be conserved. It is evident that there were 200 plants outside of that protected area. At the time, the Manchester Conservation Area reportedly supported about 300 plants (CNDDB 1997). It appears, then, that only 60 percent of the plants were within the protected area now called the Manchester Conservation Area. Burrascano (2001) cites a communication from the City of Encinitas stating that they could do nothing about the plant removal [transplantation] because the species was not federally or State listed.

Because of the surrounding development and access issues, active management of the extant native occurrence will always be necessary. Existing regulatory mechanisms will not provide adequate support for management activities associated with this species. Federal status could attract additional support for actions to ensure natural persistence and success of this species.

E. Other natural or manmade factors affecting its continued existence.

There are several other existing and potential threats to this species in the U.S. Introduced invasive exotic plants may pose a threat to the reproductive potential of this species. Translocations can pose a threat by removal of plants from viable habitat.
Removed plants would no longer be a portion of the extant *in situ* population, thereby affecting the plants genetic and demographic potential. The loss of about 147 of the 200 native plants translocated to the Manchester site represents a loss of about 29 percent of the known native plants in the area. This likely represents a depletion of the genetic diversity of the species. Those that persist may now contribute to an altered pattern of breeding interactions among the plants and homogenization of the population. Depending upon how the seeds or cuttings were collected, outplantings of nursery grown plants to the native site could alter the genetic diversity now represented in the native population. Burrascano (2001) expressed concern about the effects of asphalt dumped near the *Hazardia* sites. Burrascano also cites a source referring to low seed viability found among field collected material and speculates on the causes. This species is likely threatened by low numbers, possibly low seed set, and seed viability. We are aware of no reports of seedlings at the native occurrence. This will contribute to the decline of genetic diversity.

CONSERVATION MEASURES PLANNED OR IMPLEMENTED
This species was listed by the State as threatened in August 2002. The California Endangered Species Act (CESA) and the Native Plant Protection Act (NPPA) will provide some protection for this species

The Multiple Habitat Conservation Plan (MHCP) for northern areas of San Diego County includes species covered by the City of Encinitas, including *Hazardia orcuttii* (AMEC 2003).

The conservation measures intended for this species are outlined in the MHCP (AMEC 2003). Under the MHCP, all major populations and critical locations of *Hazardia orcuttii*, along with enough suitable habitat to sustain pollen and seed vectors, would be conserved and managed (AMEC 2003). The MHCP states that the plan will adequately preserve the species by conserving 97 percent of the known location points, major populations, and critical locations, and by application of the narrow endemic policy that requires avoidance of impacts to narrow endemics to the maximum extent practicable (AMEC 2003 p. 4-111and 4-112). A city will not allow more than a 5 percent loss of populations or occupied acreage within the Focused Planning Area (AMEC 2003). However, the conservation provisions of the MHCP for the known *Hazardia orcuttii* occurrence will not take effect until the Service issues a permit to the City of Encinitas, based on their MHCP subarea Plan.

The Manchester Conservation Area is managed by the CNLM, and management at the site includes signage, fence maintenance, monitoring and habitat restoration, and public services. The area is patrolled two to four times each month to assess trespass and management needs (CNLM 2003a). CNLM maintains an active monitoring program, and is increasing fencing protection of the *Hazardia orcuttii* on the property (CNLM 2003b). The CNLM has also received a grant from the City of Encinitas for trail maintenance, signage, fencing, and erosion control. These activities likely will contribute to reducing impacts to *Hazardia*. The additional CDFG approved outplantings of 456 plants at three sites: Kelly Ranch Habitat Conservation Area, Rancho La Costa, and San Elijo Lagoon (CNLM 2004) will likely contribute to the survival of this species, depending upon the genetic diversity represented among the outplantings. CNLM and CDFG will monitor the success of these plantings.

SUMMARY OF THREATS

The majority of the native occurrence has experienced more or less continuous impacts from people in the adjacent housing area who use the open space as a recreation area. Impacts include pedestrian trampling and creation of bicycle trails near *Hazardia orcuttii* plants. There are several other existing and potential threats to this species in the U.S. Introduced invasive exotic plants may pose a threat to the reproductive potential of this species. Translocations can pose a threat by removal of plants from viable habitat. Removed plants would no longer be a portion of the extant *in-situ* population, thereby affecting the plants genetic and demographic potential. The loss of about 147 of the 200 plants translocated to the Manchester site from an adjacent native unprotected site represents a loss of about 29 percent of the known native plants in the area. This likely represents a depletion of the genetic diversity of the species. This species is likely threatened by low numbers, possibly low seed set, and seed viability. We are aware of no reports of seedlings at the native occurrence. This could be of considerable consequence and represent lack of pollinator services and/or limitations on genetic diversity of an already small population.

LISTING PRIORITY

THREAT			
Magnitude	Immediacy	Taxonomy	Priority

High	Imminent	Monotypic genus Species Subspecies/population	1 2 3
	Non-imminent	Monotypic genus **Species** Subspecies/population	4 5* 6
Moderate to Low	Imminent	Monotypic genus Species Subspecies/population	7 8 9
	Non-imminent	Monotypic genus Species Subspecies/population	10 11 12

Rationale for listing priority number:

Magnitude: Hazardia orcuttii faces a high magnitude of threat because of the relatively low numbers of plants present on the only known extant native site, and their presence in a fire prone habitat that has not burned for some time. Also no sexual reproduction has been recorded at the native site. Although there are three additional newly established sites, recruitment has not been monitored at any of the sites, their persistence is uncertain, and their participation in the sexual reproduction of the species is in doubt.

Imminence: Because the species is now State listed as threatened and occurs in a managed area, threats to the species are non-imminent, although some are persistent. This species is intrinsically vulnerable, in part, because there are so few individuals and no known seedlings.

__yes__ Have you promptly reviewed all of the information received regarding the species for the purpose of determining whether emergency listing is needed?

Is Emergency Listing Warranted? No, because there are no known rangewide threats that immediately threaten the existence of the species.

DESCRIPTION OF MONITORING:
A monitoring report from the Center for Natural Lands Management (CNLM, Markus Spiegelberg *in litt*. 2004) presents the cumulative data from monitoring in 2003 and 2004. The monitoring consisted of measuring the height and width or the plants, recording those that were dead, and noting the occasional plant with flowers. At the Manchester site 40 marked plants of the 150 planted in 2003 were measured in January, April, July, and November 2003 as well as February and June 2004. The 24 plants planted at Kelly Ranch in 2003 were measured in April, July, and November 2003 and in February and June 2004. Forty marked plants of the 100 planted at Kelly Ranch in 2004 were measured in February and June 2004. Forty of the 156 plants planted at San Elijo Lagoon in 2004 were measured in February and June 2004. Forty of the 200 plants planted at the La Costa site in 2004 were measured in February and June 2004.

The report does not discuss plant sizes, survival, or phenology of the intact native population at the Manchester site. Apparently the CNLM outplantings are generally successful, at least for the vegetative portions of the plants' life cycle. The reports present measurements of growth of plants from the Manchester site as well as of plants at the outplanting sites at Kelly Ranch, Rancho La Costa, and San Elijo Lagoon. Only occasionally were flowers noted. Apparently all of the outplanted individuals increased in height. Relatively few plants had flowers present. The monitoring reports did not report recruitment of the original native plants at the Manchester site, or recruitment by the translocated or outplanted specimens at any of the sites. The report did not cover any interactions among the newly established occurrences and the original Manchester occurrence. The more recent report (CNLM 2005) does not provide monitoring details.

COORDINATION WITH STATES

Indicate which State(s) (within the range of the species) provided information or comments on the species or latest species assessment: California

Indicate which State(s) did not provide any information or comments:

LITERATURE CITED

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APPROVAL/CONCURRENCE: Lead Regions must obtain written concurrence from all other Regions within the range of the species before recommending changes to the candidate list, including listing priority changes; the Regional Director must approve all such recommendations. The Director must concur on all 12-month petition findings, additions of species to the candidate list, removal of candidate species, and listing priority changes.

Approve: /s/ Paul Henson April 26, 2006
Acting CNO Manager, Fish and Wildlife Service Date

Concur: _____ August 23, 2006
Acting Director, Fish and Wildlife Service Date

Do not concur: _____
Director, Fish and Wildlife Service Date

Date of annual review:
Conducted by:

Comments: